



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,591	08/30/2000	Scott A. Idlas	2393/516	4358

7590 09/25/2003

Brinks Hofer Gilson & Lione  
P O Box 10395  
CHICAGO, IL 60610

13

EXAMINER

JACKSON, MONIQUE R

ART UNIT PAPER NUMBER

1773

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/652,591

Applicant(s)

IDLAS, SCOTT A.

Examiner

Monique R Jackson

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-46 and 48-100 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 and 48-100 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1773

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/9/03 has been entered.
2. Claim 47 has been canceled. New claim 100 has been added. Claims 1-46 and 48-100 are pending in the application.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 93 and 100 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 93 and 100 recite the limitation "the film excludes a core barrier layer" however it is noted that Claims 22 and 48, from which Claims 93 and 100 depend, recite layers that inherently provide barrier properties and hence Claims 93 and 100 appear to contradict their parent claims and render the claims unclear as to what type of layer is meant to be excluded from the film.

Art Unit: 1773

***Claim Rejections - 35 USC § 103***

6. Claims 1-21 and 48-87, and 94-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Idlas in view of Lustig et al (USPN 4,863,769) and in further view of Peiffer et al (USPN 6,063,482) for the reasons recited in the prior office action and restated below.

7. Idlas teaches a multilayer, preferably biaxially oriented, heat shrinkable film suitable for processing and/or packaging cook-in foods such as ham, roast beef and poultry, having an excellent combination of oxygen barrier, heat seal and optical properties as well as low extractable content levels comprising at least five sequential layers with a first layer consisting essentially of a copolymer of propene and at least one C<sub>2</sub>-C<sub>8</sub> alpha-olefin having a propene content of at least 60 wt %, preferably at least 90wt% and optionally at least 95wt%, with a melting point less than 140°C, preferably about 126-136°C; a second layer comprising (1) a first copolymer of ethylene and at least one C<sub>4</sub>-C<sub>8</sub> alpha-olefin having a density of from 0.900 to 0.915 g/cm<sup>3</sup> and a melt index of less than 1.0 dg/min and (2) a second copolymer of ethylene with from 4 to 18%, preferably 4 to 12%, of a vinyl ester or alkyl acrylate; a third gas barrier layer of EVOH or a blend of EVOH and nylon; a fourth layer the same as the second layer; and a fifth layer of a first copolymer of ethylene and at least one C<sub>4</sub>-C<sub>8</sub> having a density of from 0.900 to 0.915 g/cm<sup>3</sup> and a melt index of less than 1.0dg/min, and a second copolymer of ethylene with from 4 to 18%, preferably 4 to 12%, of a vinyl ester or alkyl acrylate, and optionally a third copolymer of ethylene and at least one C<sub>3</sub>-C<sub>8</sub> alpha-olefin having a density of less than 0.900 g/cm<sup>3</sup> and a melting point of less than 85°C; wherein the propene copolymer of the first layer is preferably a propylene-ethylene copolymer, **including a propylene-ethylene copolymer polymerized from a process using a metallocene catalyst** (Abstract; Col. 6, lines 53-65; Col.

Art Unit: 1773

10, lines 15-40; Col. 11, lines 47-62; Claim 9.) Idlas teaches that the films have desirable high shrinkage values, which may be greater than 20% in either or both directions at 90C and beneficially may be greater than 30% (Col. 6, lines 21-27; Col. 7, lines 8-11; Col. 9, lines 3-6; Col. 15, lines 13-22.)

8. Though Idlas teaches the use of EVOH as the gas barrier layer, it is well known in the art that EVOH, nylon, and PVDC, including vinylidene chloride-vinyl chloride and vinylidene chloride-methyl acrylate copolymers, are functionally equivalent gas barrier materials utilized in the art as taught by Idlas wherein Idlas specifically teaches that known packaging films typically contain EVOH, nylon, and/or PVDC barrier layers and that **EVOH is an alternative barrier layer for PVDC in terms of recycling** (Col. 2, line 43-Col. 3, line 37) and hence one having ordinary skill in the art would have been motivated to utilize any of these known and conventional barrier materials, including any conventional PVDC barrier material, based on the desired barrier and film properties for a particular end use, **particularly if recycling is not a desired property**, given the reasonable expectation of success in order to achieve similar gas barrier properties.

9. Though Idlas does not teach the type of PVDC conventionally utilized in the art, Lustig et al teaches that a biaxially oriented, heat shrinkable film comprising a gas barrier core layer that may be either ethylene vinyl alcohol or polyvinylidene chloride with a vinylidene chloride content of 70-95wt% copolymerized with vinyl chloride or acrylate esters provides a film suitable for packaging food articles such as meat products (Abstract; Col. 16, lines 31-57), as similarly used by Idlas, and hence, one having ordinary skill in the art at the time of the invention would have been motivated to utilize the functionally equivalent polyvinylidene chloride taught

Art Unit: 1773

by Lustig having a vinylidene chloride content of 70-95wt% in place of the EVOH gas barrier layer in the invention taught by Idlas.

10. Idlas also teaches that the multilayer films have a thickness of 10 mils (254 microns) or less with the first layer comprising the propene copolymer being the food contact layer and may further include adhesive layers or additional intermediate layers wherein the packaging films have low levels of extractables with compliance with governmental regulations for food contact (Col. 6, lines 64-65; Col. 7, lines 26-41; Col. 8, lines 15-24.) Though Idlas teaches that the packaging film has low extractable levels and contains a first layer that may comprise a propylene-ethylene copolymer formed in the presence of metallocene catalysts, wherein it is well known in the art that copolymers formed by metallocene catalysts have narrow molecular weight distribution Mw/Mn, Idlas does not teach the n-hexane extractable content and the Mw/Mn of the propene copolymer as instantly claimed.

11. However, it is well known in the art that Mw/Mn and n-hexane extractable content are results of the polymerization process and are result-effective variables affecting the properties of the copolymers formed, particularly the melt processability and heat seal properties of the polymer as taught by Peiffer et al. Peiffer et al specifically teach a packaging film comprising a propylene polymer containing at least 90wt% propylene units and not more than 10wt% ethylene units wherein the propylene polymer is polymerized in the presence of metallocene catalysts producing a polymer structure having an n-heptane extractable content of less than 1.0wt% and a low molecular weight distribution of less than 4, particularly 1.5 to 2.7, wherein the structure of the propylene polymer provides a packaging film having improved film properties including elasticity and high gloss (Col. 3, line 38 - Col. 4, lines 67.) Hence, given the reasonable

Art Unit: 1773

expectation of success, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum polymerization conditions to produce the metallocene-catalyzed propene copolymer taught by Idlas having the desired Mw/Mn and n-hexane extractable content for a particular end use, wherein Peiffer et teach the production of metallocene-catalyzed propylene copolymers having n-hexane extractable content and Mw/Mn values as instantly claimed provide improved film properties.

12. Claims 22-46 and 88-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Idlas in view of Lustig et al and in further view of Peiffer et al for the reasons recited in the prior office action and restated below.

13. The teachings of Idlas in view of Lustig et al and in further view of Peiffer et al are discussed above. Though Idlas teaches that the packaging films may further comprise additional intermediate layers, Idlas does not specifically teach the incorporation of an intermediate or transition layer between the first propene copolymer layer and the second ethylene blend layer, however, it is well known in the art that tie or intermediate layers can be provided between two adjacent layers wherein the tie or transition layer is a blend of the polymer materials utilized in the two adjacent layers thereby providing improved adhesion between the two layers. Hence, one having ordinary skill in the art would have been motivated to provide an intermediate layer as taught by Idlas between the first propene layer and the second ethylene blend layer wherein it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum blend composition and thickness of the intermediate layer based on the composition of the first and second layers of the film taught by Idlas to provide the desired adhesion between the two layers.

Art Unit: 1773

14. Claims 1-46, 48-92 and 94-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Idlas in view of Tsukamoto et al (USPN 6,063,462.) The general teachings of Idlas are discussed above in paragraph 4. Though Idlas teaches the use of EVOH as the gas barrier layer, it is well known in the art that EVOH, nylon, and PVDC, including vinylidene chloride-vinyl chloride and vinylidene chloride-methyl acrylate copolymers, are functionally equivalent barrier materials utilized in the art as taught by Idlas wherein Idlas specifically teaches that known packaging films typically contain EVOH, nylon, and/or PVDC barrier layers and that EVOH is an alternative barrier layer for PVDC in terms of recycling (Col. 2, line 43-Col. 3, line 37) and hence one having ordinary skill in the art would have been motivated to utilize any of these known and conventional barrier materials, including any conventional PVDC barrier material, based on the desired barrier and film properties for a particular end use, particularly if recycling is not a desired property, given the reasonable expectation of success in order to achieve similar gas barrier properties. Further, Tsukamoto et al also teach a flexible multilayer, heat shrinkable film suitable as a food packaging material wherein the film may comprise a gas barrier layer selected from for example, vinylidene chloride copolymers, ethylene-vinyl alcohol copolymer and various nylons, or a mixture of these gas barrier resins, wherein the vinylidene chloride copolymers (PVDC) include copolymers of vinylidene chloride and at least one mono-ethylenically unsaturated monomer copolymerizable therewith such as vinyl chloride and methyl acrylate in a proportion of 2-40wt% (Col. 6, lines 49-Col. 7, line 33.) Therefore, one skilled in the art would have been motivated to utilize PVDC as taught by Tsukamoto et al as a functionally equivalent gas barrier material to EVOH in the invention taught by Idlas.



Art Unit: 1773

15. Idlas also teaches that the multilayer films have a thickness of 10 mils (254 microns) or less with the first layer comprising the propene copolymer being the food contact layer and may further include adhesive layers or additional intermediate layers wherein the packaging films have low levels of extractables with compliance with governmental regulations for food contact (Col. 6, lines 64-65; Col. 7, lines 26-41; Col. 8, lines 15-24.) Though Idlas teaches that the packaging film has low extractable levels and contains a first layer that may comprise a propylene-ethylene copolymer formed in the presence of metallocene catalysts, wherein it is well known in the art that copolymers formed by metallocene catalysts have narrow molecular weight distribution Mw/Mn, Idlas does not teach the n-hexane extractable content and the Mw/Mn of the propene copolymer as instantly claimed.

16. However, it is well known in the art that Mw/Mn and n-hexane extractable content are results of the polymerization process and are result-effective variables affecting the properties of the copolymers formed, particularly the melt processability and heat seal properties of the polymer. Further, Tsukamoto et al teach that by utilizing a metallocene catalyzed polyolefin, such as a propylene-based homopolymer or copolymer with minor portions of another  $\alpha$ -olefin, having a Mw/Mn of below 3.0, preferably 1.5-2.8, and having little oligomer or low-molecular weight polymer faction, i.e. low levels of extractables, it is possible to provide a multilayer film with little stickiness (Col. 4, line 55-Col. 5, line 12.) Hence, given the reasonable expectation of success, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum polymerization conditions to produce the metallocene-catalyzed propene copolymer taught by Idlas having the desired Mw/Mn and n-hexane extractable content for a particular end use, wherein Tsukamoto et al teach

Art Unit: 1773

that the use of a metallocene-catalyzed polyolefin with a Mw/Mn of below 3.0, preferably 1.5-2.8, and having little oligomer or low-molecular weight polymer fraction, i.e. low levels of extractables, provides a multilayer film with little stickiness.

17. With regards to Claims 22-46 and 88-92, though Idlas teaches that the packaging films may further comprise additional intermediate layers, Idlas does not specifically teach the incorporation of an intermediate or transition layer between the first propene copolymer layer and the second ethylene blend layer, however, it is well known in the art that tie or intermediate layers can be provided between two adjacent layers wherein the tie or transition layer is a blend of the polymer materials utilized in the two adjacent layers thereby providing improved adhesion between the two layers. Hence, one having ordinary skill in the art would have been motivated to provide an intermediate layer as taught by Idlas between the first propene layer and the second ethylene blend layer wherein it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum blend composition and thickness of the intermediate layer based on the composition of the first and second layers of the film taught by Idlas to provide the desired adhesion between the two layers, wherein Tsukamoto et al further teach that adhesive or intermediate layers may be disposed between respective layers to ensure sufficient adhesion between adjacent layers (Col. 7, lines 34-36.)

18. Claims 1-46, 48-92 and 94-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto et al (USPN 6,063,462) in view of Idlas. Tsukamoto et al teach a flexible multilayer film suitable as a food-packaging material including a first seal layer comprising principally a metallocene-catalyzed polyolefin, and a second seal layer comprising a copolymer

Art Unit: 1773

of at least one oxygen-containing monomer and ethylene, wherein the two adjacent layers of the multilayer film provide improved film-formability while retaining good sealability (Abstract.)

Tsukamoto et al teach that the metallocene-catalyzed polyolefin in the first seal layer may be ethylene-based, propylene-based or butene-based wherein ethylene-based resins include copolymers of ethylene in a major proportion, at least 50wt% and a minor proportion of another  $\alpha$ -olefin (Col. 4, lines 1-6.) Propylene-based resins may include homopolymers of propylene and copolymers of propylene with ethylene and other  $\alpha$ -olefins (Col. 4, lines 12-15.) Tsukamoto et al teach that in order to provide a multilayer film having good film formability and heat resistance in addition to the sealability, hot tack and transparency, it is preferred to compose the first seal layer of a mixture comprising 90-0wt%, more preferably 90-25wt% of metallocene-catalyzed polyolefin having a melting point of 105-156°C (Col. 4, lines 18-24.) In the case of a heat-shrinkable film, it is preferred to have at least 25wt% of the metallocene-catalyzed polyolefin with a melting point of 105-145°C so as to provide further improved resistances to boiling and cooking (Col. 4, lines 46-5.) Tsukamoto et al teach that the metallocene-catalyzed polyolefin has a Mw/Mn of below 3.0, preferably 1.5-2.8, and that by having little oligomer or low-molecular weight polymer fraction, i.e. low levels of extractables, it is possible to provide a multilayer film with little stickiness, wherein the Examiner takes the position that these polyolefins would have n-hexane extractables values within the instantly claimed ranges (Col. 4, line 55-Col. 5, line 12.)

19. Tsukamoto et al also teach that the second seal layer comprises a resin that shows good adhesion to the first seal layer and comprises a copolymer of ethylene and at least one oxygen-containing monomer such as vinyl acetate, unsaturated acids like acrylic acid and methacrylic

Art Unit: 1773

acid, or C<sub>1</sub>-C<sub>4</sub> alkyl esters of such unsaturated acids and ionomers derived therefrom (Col. 5, lines 12-35.) The first second seal layer comprises the ethylene copolymer with 80-95wt% ethylene and 20-5wt% of the oxygen-containing monomer and may further contain a metallocene-catalyzed polyolefin or another ethylene/ $\alpha$ -olefin copolymer within an extent of not hindering transparency of the resultant film. Hence, Tsukamoto et al does not specifically teach the blend of the second layer as instantly claimed however Idlas teaches a second layer adjacent a propylene seal layer including metallocene catalyzed propylene-ethylene copolymer wherein the second layer provides good interlayer adhesion to the multilayer film and comprises at least 10wt% ethylene/vinyl ester or alkyl acrylate copolymer blended with at least 10wt% of VLDPE, a copolymer of ethylene and at least one C<sub>4</sub>-C<sub>8</sub>  $\alpha$ -olefin having a density of from 0.900 to 0.915 g/cc, wherein the incorporation of VLDPE provides higher shrink, higher tensile strength and greater puncture resistance, and wherein this second layer as well as a fourth layer similar to this second layer can be provided on both sides of a core barrier layer in the multilayer film. (Col. 12, line 27-Col. 13, line 30.) Therefore, given the reasonable expectation of success, one having ordinary skill in the art at the time of the invention would have been motivated to include at least 10wt% of VLDPE or ethylene/C<sub>4</sub>-C<sub>8</sub>  $\alpha$ -olefin copolymer having a density of from 0.900 to 0.915 g/cc as taught by Idlas in the second seal layer taught by Tsukamoto et al comprising the copolymer of ethylene and an oxygen-containing monomer such as ethylene/vinyl ester or alkyl acrylate copolymer considering Tsukamoto et al specifically teach that the second layer may further comprise ethylene/ $\alpha$ -olefin copolymers and given that Idlas teaches that the incorporation of at least 10wt% VLDPE provides higher shrink, higher tensile strength and greater puncture resistance.

Art Unit: 1773

20. Tsukamoto et al further teach that the multilayer film may further comprise an outermost thermoplastic layer selected from thermoplastic resins listed at Col. 6, lines 41-49 or an intermediate layer that functions as a gas barrier layer comprising vinylidene chloride copolymer EVOH, or various nylons or blends of such gas barrier resins wherein the vinylidene chloride copolymers (PVDC) include copolymers of vinylidene chloride and at least one mono-ethylenically unsaturated monomer copolymerizable therewith such as vinyl chloride and methyl acrylate in a proportion of 2-40wt% (Col. 6, lines 41-Col. 7, line 33.) Tsukamoto et al teach that the film shrinkability resulting from stretch-orientation can vary depending on the usage but may for example be at least ca. 30% in both directions with preferably ca. 25-50% at 90-95C for hot sterilization for processed meat packaging (Col. 9, lines 3-14.) The film may further comprise a thermoplastic adhesion layer to provide sufficient adhesion between adjacent layers with a preferable thickness of at most 5 microns, more preferably 1-3 microns; as well as additional resin layers or recycle/pulverizate layers that would include the metallocene-catalyzed polyolefin of the first seal layer and the ethylene copolymer of the second seal layer (Col. 7, lines 33-50; Col. 8, lines 38-61.) Tsukamoto et al teach that the layers may be arranged in various structures and with a desired thickness based on the particular end use of the film and that typical layer arrangements are shown at Col. 9, lines 15-25, including one embodiment having the following structure: surface layer (first seal layer)/second seal layer/gas barrier layer/surface layer, as well as other structures that exclude a core barrier layer (Col. 9, lines 13-25; Examples.) Therefore, though Tsukamoto et al does not specifically teach all of the film structures as instantly claimed, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum film structure and layer thickness for a

Art Unit: 1773

particular end use utilizing any of the material taught by Tsukamoto et al given the reasonable expectation of success.

***Response to Arguments***

21. Applicant's arguments filed 6/9/03 have been fully considered but they are not persuasive for the following reasons:

***I. A1. Idlas allegedly teaches away from instant invention because it teaches away from PVDC***

22. Applicant first argues that the recitation at Col. 3, lines 25-30 of Idlas teaches away from the use of PVDC and that Idlas only teaches embodiments utilizing EVOH. However, as previously stated, the Examiner notes that Idlas only states that "recycling of PVDC polymers is difficult" and that for "this reason EVOH has been employed as an alternative barrier layer", hence, if one skilled in the art is not concerned with recycling, PVDC would be an obvious barrier material given the teachings of Idlas. Further, though Idlas utilized EVOH in all embodiments, Idlas clearly suggests that EVOH, PVDC and nylon are known functionally equivalent gas barrier materials utilized in the art, a fact that is well-established in the art as further noted by Lustig as well as Tsukamoto et al or Eckstein (Col. 5, lines 45-52), note: additional references can be supplied to support the Examiner's position that EVOH and PVDC are functional equivalents in the art in terms of gas barrier materials, wherein one skilled in the art at the time of the invention would have been motivated to utilize PVDC or EVOH in the invention taught by Idlas if recycling was of no concern. Hence, the Examiner does not believe that the teachings of Idlas would lead one skilled in the art away from the instant invention, but

Art Unit: 1773

on the contrary, provides a suggestion to one skilled in the art to utilize PVDC given the reasonable expectation of success, once again, if recycling properties is of no concern.

***I. A2. Idlas allegedly teaches away from instant invention because it teaches random propylene-ethylene copolymer as being preferred***

23. With regards to the Applicants' arguments related to the propylene copolymer, though Idlas may state that a random copolymer is preferred, Idlas clearly discloses the use of metallocene catalyzed propylene ethylene copolymer and hence provides a suggestion to one having ordinary skill in the art to utilize metallocene catalyzed propylene ethylene copolymers given the reasonable expectation of success.

***I. B. No suggestion or motivation to substitute PVDC of Lustig for EVOH of Idlas***

24. As recited above, Idlas alone provides the suggestion that PVDC and EVOH are functional equivalent barrier materials and hence one would be motivated to utilize PVDC in the invention taught by Idlas if the ability to recycle is not an issue. Further, Lustig also teaches that PVDC and EVOH are functional equivalents and additionally is relied upon to teach that a PVDC with a particular vinylidene content is suitable to provide desirable gas barrier properties in general.

***I. C. Hindsight reason is required to optimize the polymerization conditions of Idlas in light of Peiffer***

25. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

Art Unit: 1773

time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, Idlas clearly suggests the use of metallocene catalyzed propylene-ethylene copolymers wherein it is well known in the art that copolymers formed by metallocene catalysts have narrow molecular weight distribution Mw/Mn (MWD), however Idlas does not teach MWD or the n-hexane extractable content as instantly claimed. However, these properties of metallocene catalyzed polymers are result-effective variables affecting the properties of the copolymers formed, particularly the melt processability and heat seal properties of the polymer as is well known in the art and evidenced by Peiffer et al wherein, given the reasonable expectation of success, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum polymerization conditions to produce the metallocene-catalyzed propene copolymer taught by Idlas having the desired Mw/Mn and n-hexane extractable content for a particular end use, wherein Peiffer et teach the production of metallocene-catalyzed propylene copolymers having n-hexane extractable content and Mw/Mn values as instantly claimed provide improved film properties. Hence, the Examiner has relied upon only knowledge which was within the level of ordinary skill at the time of the invention. Further, it is noted that the Applicant argues unexpected results with regards to the specific combination of layers and polymer properties however the Examiner notes that there appears to be no clear showing of unexpected results on the record to overcome the obviousness rejections.

***I. D. The rejection is allegedly improper because Idlas teaches at least five layers, whereas Claims 48-80 and 95-99 recite "consist essentially of".***



Art Unit: 1773

In terms of the instantly claimed invention utilizing the transitional phrase “consisting essentially of”, it is noted that for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 (“PPG could have defined the scope of the phrase consisting essentially of” for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention.”). See also *In re Janakirama-Rao*, 317 F.2d 951, 954, 137 USPQ 893, 895-96 (CCPA 1963). If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of “consisting essentially of,” applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant’s invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also *Ex parte Hoffman*, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989.) Given that the Applicant has provide no statement on the record or in the instant disclosure that incorporation of the additional layer taught by Idlas would **materially affect the basic and novel characteristics** of the instant invention, the Examiner takes the position that the invention taught by Idlas reads on those claims that recite, “consisting essentially of”.

***I. E. Claims 84, 85, 98 and 99 require high shrinkage***

The Applicant’s arguments regarding the “high shrinkage” values as instantly claimed in 84, 85, 98 and 99 have been considered, however it is noted that Idlas et al recite a shrinkage range greater than 30% which includes the values as instantly recited. As stated above, Idlas clearly suggests the use of metallocene catalyzed copolymers and though Idlas does not

Art Unit: 1773

expressly state that higher shrinkage rates can be obtained with the metallocene catalyzed copolymers, Idlas clearly encompasses shrinkage values of greater than 30%. Therefore, given that the Applicant has provided no clear showing of unexpected results with regards to the “higher” shrinkage values, particularly as a result of the selection of the metallocene catalyzed polymers, the Examiner maintains that the instant invention is obvious given the teachings of the prior art.

With regards to Applicant’s arguments recited in item IIA, the Examiner has relied upon the fact that tie layers are known in the art to comprise the same materials of the two layers to be joined by the tie layer. Applicant argues that Ildas provides no indication to select which parameters are critical among the many possible combinations for the transition layer however Idlas does in fact provide a suggestion, given the knowledge in the art with regards to tie layer materials, to utilize the disclosed polymers. Though the Applicant has argued that one skilled in the art would be required to conduct undue experimentation to obtain the high shrinkage rates as claimed, it is noted that the Applicant has not provided a clear showing of unexpected results with regards to the tie layer composition and the high shrinkage rates. With regards to item IIB, the Examiner refers the Applicant to the comments recited in I.C. above.

### ***III. Rejection over Idlas in view of Tsuakamoto et al***

The majority of the Examiner’s statement above further apply to Applicant’s arguments recited here, i.e with regards to PVDC vs. EVOH have been addressed above in item I.A.1, “consists essentially of” has been addressed I.D. above. The Applicant also argues that Tsuakamoto et al provide no guidance to modifying the propene copolymer of Idlas to obtain the required MWD or n-hexane extractables given that the examples provided by Tsuakamoto et al

Art Unit: 1773

are ethylene copolymers. However, as generally noted above, it is well known in the art that Mw/Mn and n-hexane extractable content are results of the polymerization process and are result-effective variables affecting the properties of the copolymers formed, particularly the melt processability and heat seal properties of the polymer, wherein Tsukamoto et al further support this statement and disclose that improved film properties can be obtained if one selected the instantly claimed values.

#### IV. Rejection over Tsukamoto in view of Idlas

It is first noted that the rejection is based on Tsukamoto as the primary reference. The Applicant argues that Idlas provide no guidance to modify the ethylene copolymer of Tsukamoto to obtain the required MWD and undue experimentation would be required. However, it is noted that though the examples disclosed by Tsukamoto are directed to ethylene-based copolymer, Tsukamoto et al clearly teach that the metallocene-catalyzed polyolefin in the first seal layer may be ethylene-based, propylene-based or butene-based wherein ethylene-based resins include copolymers of ethylene in a major proportion, at least 50wt% and a minor proportion of another  $\alpha$ -olefin include propylene, and hence provides a clear motivation for one skilled in the art to utilize metallocene-catalyzed propylene-ethylene copolymers. Tsukamoto et al further teach that the metallocene-catalyzed polyolefin has a Mw/Mn of below 3.0, preferably 1.5-2.8, and that by having little oligomer or low-molecular weight polymer fraction, i.e. low levels of extractables, it is possible to provide a multilayer film with little stickiness, wherein the Examiner takes the position that these polyolefins would have n-hexane extractables values within the instantly claimed ranges. Hence, the Tsukamoto et al reference alone provides a clear suggestion to

Art Unit: 1773

utilize metallocene-catalyzed propylene-ethylene copolymers having the instantly claimed MWD given the reasonable expectation of success without undue experimentation.

The Applicant further argues that the instant invention only requires two polymers however the Examiner notes that the instant claimed do not exclude the incorporation of other polymer materials. Further, Applicant's arguments with regards to the term "consists essentially of" have been addressed above.

Therefore, given the above and the lack of a clear showing of unexpected results, the Examiner maintains her position that the claimed invention would have been obvious over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
**MONIQUE R. JACKSON**  
**PRIMARY EXAMINER**

Technology Center 1700  
September 22, 2003